TYPE
WFSL BASE

CERTIFIED FOR
JOB NAME: ARLENE SCHNITZER
CUSTOMER: MASON OREGON
CUSTOMER P.O.: ____ JOB NO.: ____
MASON E.O.: 36969 DWG. NO.: WF-36969-01-4
REQUIRED: (1) TAG: CT-1

MASON INDUSTRIES, Inc.
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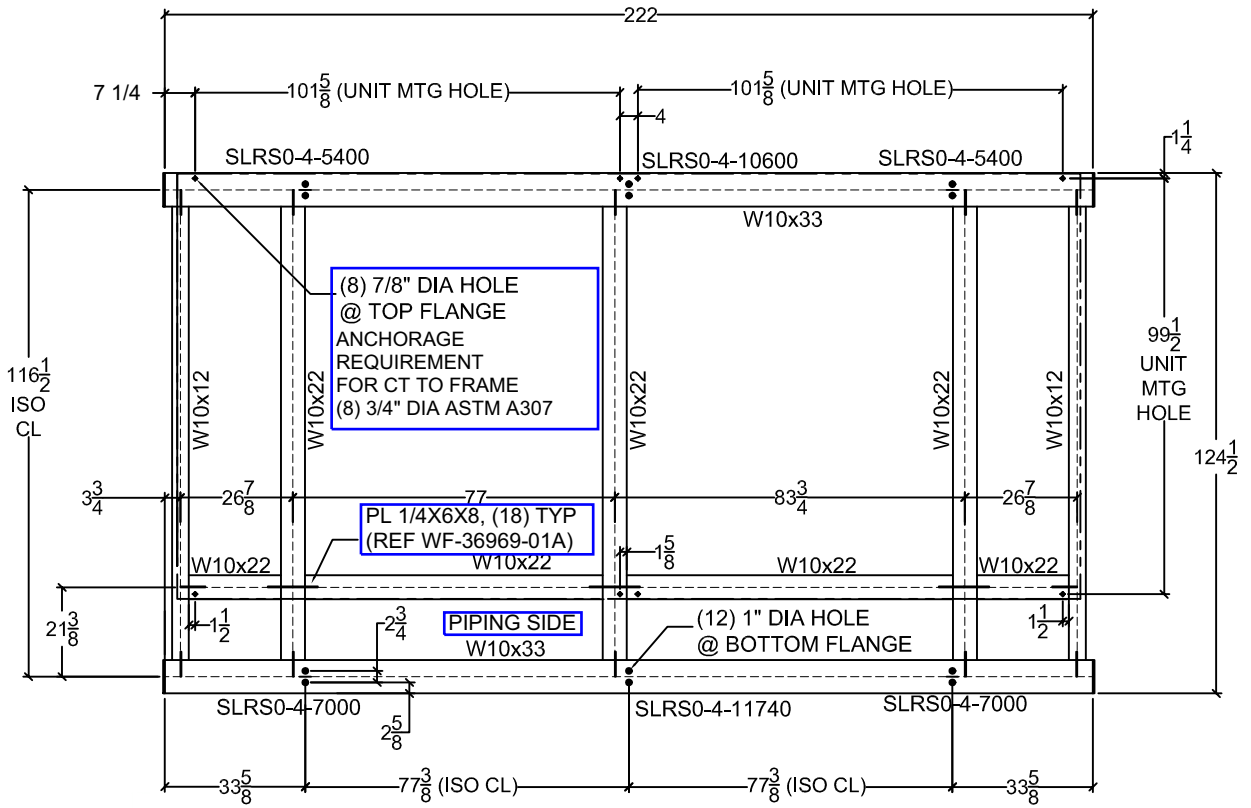
TELEX 96-8464

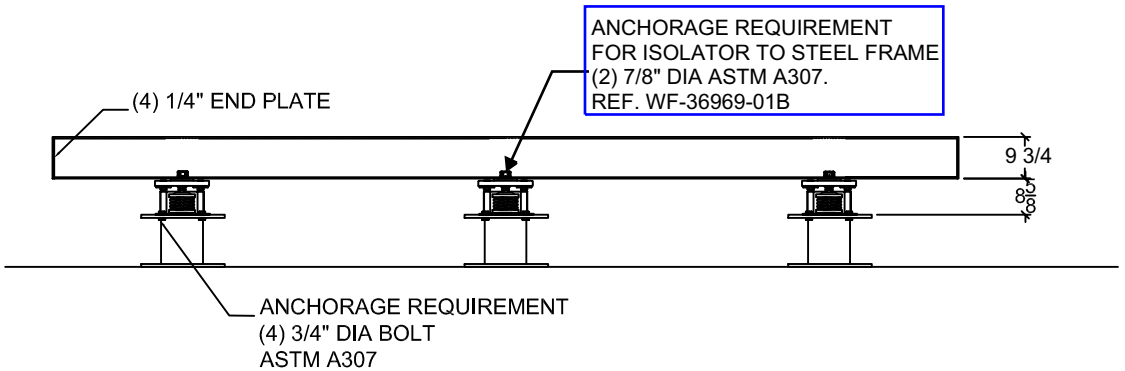
UNIT: BAC-FXV-0818A-36H-L ISOLATOR REF. DWG.: WF-SLRS2

STEEL WT.: 2480 LBS EQUIPMENT WT.: 29220 LBS TOTAL WT.: 33900 LBS SPECIFIED DEFL: 2.0"

PIPE WT.: 2200 LBS

REV-04:NN, 11/20/23
REV-03:NN, 09/29/23
REV-02: NN, 09/28/23
DWG. NO. WF-36969-01-4





REGISTERED PROFESSIONAL ENGINEER
MAY 10, 20
ARY EVAN LANDINGHA
EXPIRES 12.31.24

DWN NN | CHK'D TH | DATE 5/23/19

A1

A1

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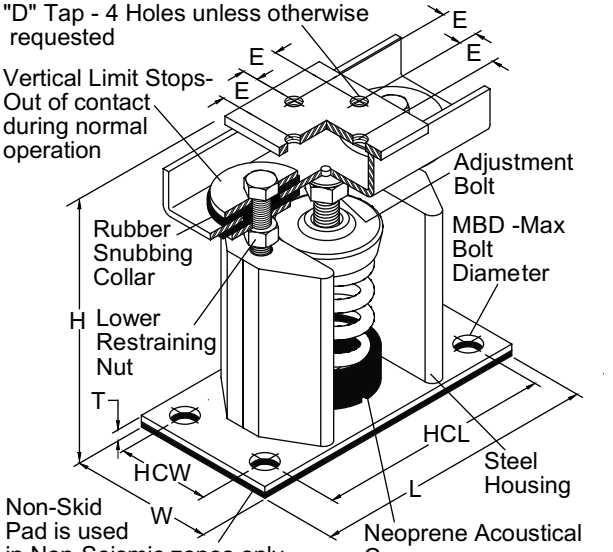
JOB NAME ARLENE SCHNITZER
CUSTOMER MASON OREGON
CUSTOMER P.O.
MASON M.I. EO 36969
DWG. NO. WF-SLRS01

SLRSO

1" DEFLECTION B, 1, 2 & 4 SERIES SPRING MOUNTS



TYPE SLRSO RATINGS

Size	Rated Capacity (lb)	Rated Defl. (in)	Spring Constant (lb/in)	Max. Horiz. Housing G Rating	Spring Color
SLRSO-B-65	65	2.10	31	21.6	Brown
SLRSO-B-85	85	2.10	40	16.5	Wht/Blk
SLRSO-B-115	115	2.00	57	12.2	Silver
SLRSO-B-150	150	2.00	75	9.3	Orange
SLRSO-B-280	280	1.60	174	5.0	Green
SLRSO-B-450	450	1.31	344	3.1	Red
SLRSO-B-750	750	1.12	670	1.9	White
SLRSO-B-1000	1000	1.00	1000	1.4	Blue
SLRSO-1-1000	1000	1.00	1000	4.4	Black
SLRSO-1-1350	1350	1.00	1350	3.3	Yellow
SLRSO-1-1750	1750	1.00	1750	2.5	Black*
SLRSO-1-2100	2100	1.00	2100	2.1	Yellow*
SLRSO-1-2385	2385	1.00	2385	1.9	Yellow**
SLRSO-1-2650	2650	1.00	2650	1.7	Red*
SLRSO-1-2935	2935	1.00	2935	1.5	Red**
SLRSO-2-3500	3500	1.00	3500	1.8	Black*
SLRSO-2-4200	4200	1.00	4200	1.5	Yellow*
SLRSO-2-4770	4770	1.00	4770	1.3	Yellow**
SLRSO-4-5400	5400	1.00	5400	2.0	Yellow
SLRSO-4-7000	7000	1.00	7000	1.6	Black*
SLRSO-4-8400	8400	1.00	8400	1.3	Yellow*
SLRSO-4-9540	9540	1.00	9540	1.2	Yellow**
SLRSO-4-10600	10600	1.00	10600	1.1	Red*
SLRSO-4-11740	11740	1.00	11740	0.9	Red**

* with RED inner spring ** with GREEN inner spring

SPRING DATA

Size	Spring OD	Free Height	Ratio K_x/K_y	Ratio OD/OH
B	2 3/8	4	0.70-0.80	0.80 - 1.25
C	2 7/8	4 1/8	0.90-1.10	0.92

Illustration shows SLRSO-B housing which contains one (1) B spring. Not shown is SLRSO-1 housing which contains one (1) C2 spring, SLRSO-2 housing which contains two (2) C2 springs and SLRSO-4 which contains four (4) C2 springs.

All springs have an additional travel to solid equal to 50% of the rated deflection.

Housing load ratings expressed in G's are based on tests with bolted connections to steel top and bottom.

TYPE SLRSO DIMENSIONS (inches)

Size	L	W	H	T	MBD	HCW	HCL	D	E
SLRSO-B	8 1/2	4 1/4	8 3/4	3/8	5/8	2 3/4	7	1/2	1 1/8
SLRSO-1	9 1/2	5 1/4	8 3/4	3/8	5/8	3 1/2	7 1/2	5/8	1 3/8
SLRSO-2	14	5 1/4	8 3/4	3/8	5/8	3 1/2	12 1/4	5/8	1 3/8
SLRSO-4	13 3/4	8	8 3/4	3/8	3/4	6 1/4	11	7/8	1 3/8

REGISTERED PROFESSIONAL ENGINEER
MARY EVAN LANDINGHAM
MAY 10, 20
EXPIRES 12.31.24

FORM S-176 10/2008	DWN: NN	CHKD: WL	DATE: 08/14/23	DWG. No. WF-SLRS1

A2

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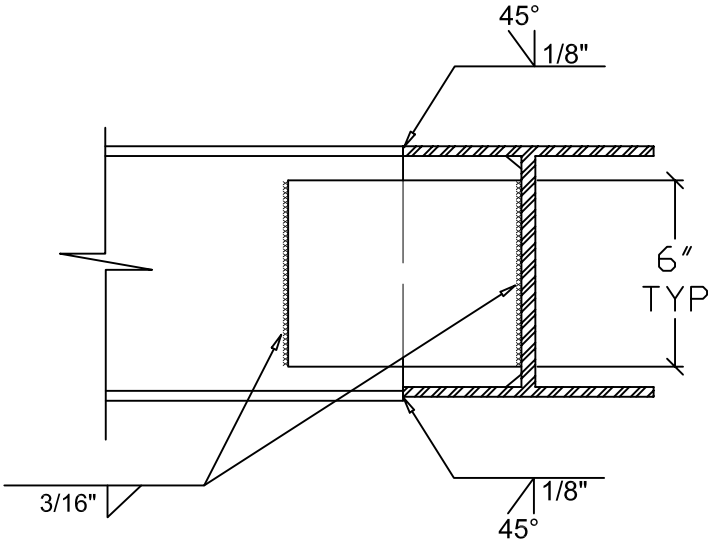
TELEX 96-8464

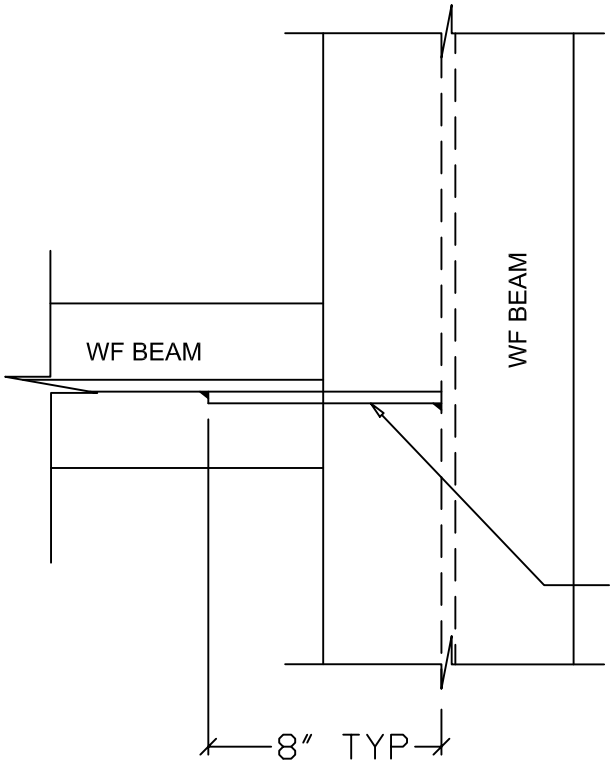
CERTIFIED FOR
JOB NAME: ARLENE SCHNITZER
CUSTOMER: MASON OREGON
CUSTOMER P.O.: _____ JOB NO.: _____
MASON E.O.: 36969 DWG. NO.: WF-36969-01A
TAG CT-1

BEAM TO BEAM
WELDED CONNECTION DETAILS



WF BEAM SIZE	CONNECTING PLATE SIZE
W10x12	PL 1/4 x 6 x 8
W10x22	PL 1/4 x 6 x 8
W10x33	PL 1/4 x 6 x 8

NOTE: ALL WELD ELECTRODES TO BE 70XX



NOTE:
MECHANICAL CONTRACTOR
TO WORK OUT WITH INSPECTOR
FOR SPECIAL INSPECTION
SUBJECT TO WELDS

REGISTERED PROFESSIONAL ENGINEER
MARY EVAN LANDINGHAM
MAY 10, 20
EXPIRES 12.31.24

(NOT TO SCALE)

DWN	CHKD	DATE
NN		09/28/23

DWG. NO. WF-36969-01A

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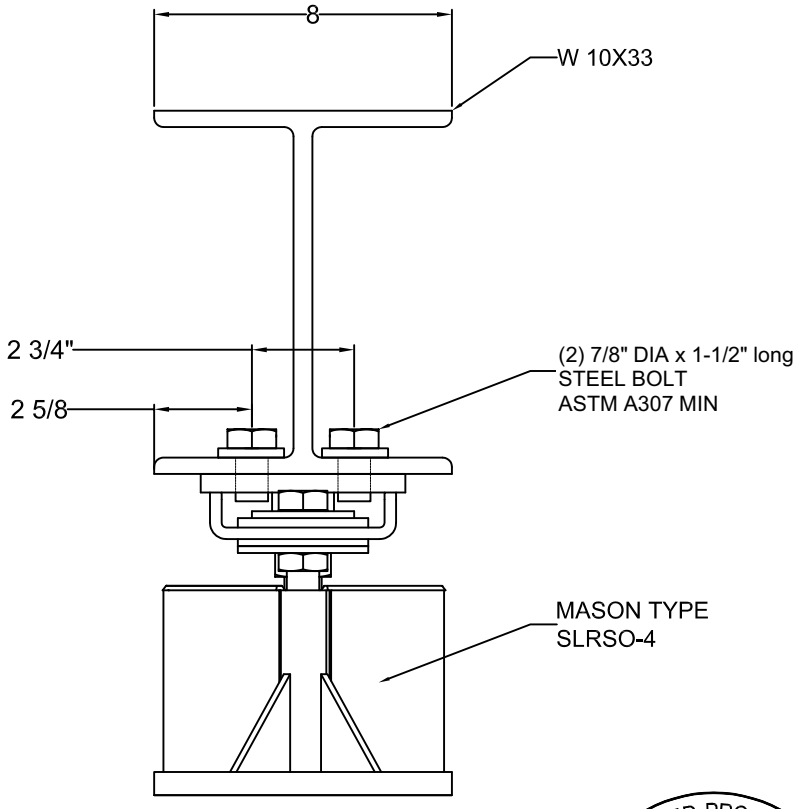
CERTIFIED FOR
JOB NAME: ARLENE SCHNITZER
CUSTOMER: MASON OREGON
CUSTOMER P.O.: _____ JOB NO.: _____
MASON E.O.: 36969 DWG. NO.: WF-36969-01B
TAG: CT-1

CONNECTION DETAILS FOR ISOLATOR TO STEEL FRAME



EXPIRES 12.31.24

DWN	CHKD	DATE
NN		09/28/23

DWG. NO. WF-36969-01B

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2101 W. Crescent, Ste. D, Anaheim, CA 92801, 714/535-2727, FAX 714/535-5738

SEISMIC OVERTURNING CALCULATIONS

JOB NAME:	ARLENE SCHNITZER
CUSTOMER:	MASON OREGON
EO NUMBER:	####
EQUIPMENT TAGS:	CT
9/29/2023	DWG. NO: **C01A-1**

SEISMIC DESIGNS FOR NONSTRUCTURAL COMPONENT PER ASCE 7-10 OR 7-16, SECTION 13.3.1

(All Units Are in Lbs and Inches)

Max. Component Weight, Wp =	**33900**	
Component Aplification Factor, ap =	**2.5**	*(ASCE 7, Table 13.6-1)*
Component Response Modification Factor, Rp =	**2.0**	*(ASCE 7, Table 13.6-1)*
*Design Overstrength Factor, Ω_o =	***1.0***	*(ASCE 7, Table 13.6-1) for Concrete Anchorage Designs Only*
Spectral Acceleration, S_{ds} =	**0.680**	*(ASCE 7, Section 11.4.4 or per Structural Plans)*
Component Importance Factor, Ip =	**1.00**	*(ASCE 7, Section 13.1.3 or per Structural Plans)*
Ratio of Elevation Height vs. Mean Roof Height, z/h =	**1.00**	*(0 for Grade Level or Below, 1 for Roof Level)*

Horizontal Seismic Force (LRFD):

ASD Conversion Factor = 0.7

$$F_{ph} = \frac{0.4 a_{p} S_{ds} W_p}{\left(\frac{R_p}{I_p}\right)}\left(1 + 2\frac{z}{h}\right) =$$ *34578* *(ASCE 7, Equation 13.3-1)* = 24205 (ASD Level)

$$F_{ph\,(minimum)} = 0.3 S_{ds} I_p W_p =$$ *6916* *(ASCE 7, Equation 13.3-3)* = 4841 (ASD Level)

$$F_{ph\,(maximum)} = 1.6 S_{ds} I_p W_p =$$ *36883* *(ASCE 7, Equation 13.3-2)* = 25818 (ASD Level)

Fph (governing) = ***34578*** = ***24205*** (ASD Level)

Horizontal Seismic "G" Force Ratio= *1.02* = *0.71* (ASD Level)

Vertical Seismic Component (LRFD):

$$F_{pv} = 0.2 S_{ds} W_p =$$ ***4610*** = 3227 (ASD Level)

Component Seismic Mounts Layout & Critical Overturning Angle:

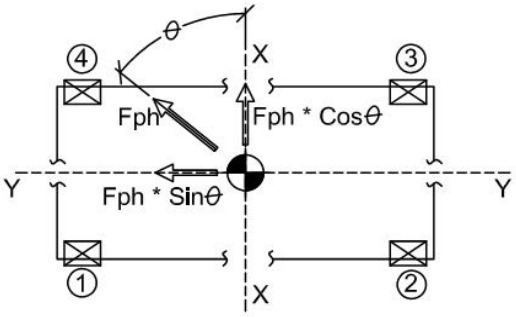
Seismic Mount Model =	**SLRS**
Total Number of Seismic Mounts, N =	**6**
Maximum Length Between Isolators/Mounts, b1 =	**155**
Maximum Width Between Seismic Mounts, b2 =	**117**
Combined C.G. Height of Component, h =	**90**

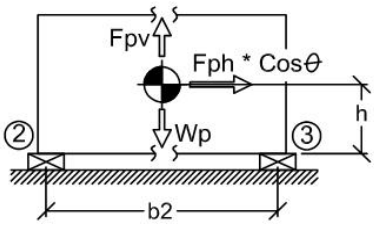
$$I_{XX} = \frac{N(N+2)}{12(N-2)} b_1^2 =$$ *23948*

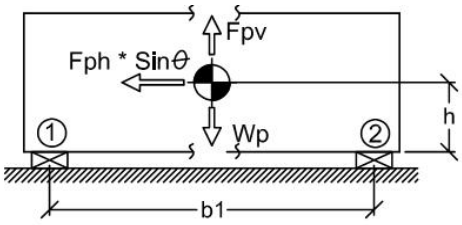
$$I_{YY} = \frac{N}{4} b_2^2 =$$ *20358*

$$\theta = \tan^{-1}\left(\frac{I_{YY} b_1}{I_{XX} b_2}\right) =$$ *0.85* *rad*

= *48* *deg*







DWN: NN

DWG. NO.: C01A-1

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SEISMIC OVERTURNING CALCULATIONS

JOB NAME:	ARLENE SCHNITZER
CUSTOMER:	MASON OREGON
EO NUMBER:	36969
EQUIPMENT TAGS:	CT
11/20/2023	DWG. NO: **C01B-1**

Based On Seismic Horizontal Force Applied on Component At a Critical Angle, θ

Maximum Uplift at Seismic Mount Location #2:

(LRFD) $$P_t = \frac{0.9W_p - F_{pv}}{N} - \frac{F_{ph} * \cos\theta * h * b_2}{2 * I_{YY}} - \frac{F_{ph} * \sin\theta * h * b_1}{2 * I_{XX}} = \textbf{-9114}$$

(ASD) $$P_{t(ASD)} = \frac{0.6W_p - F_{pv(ASD)}}{N} - \frac{F_{ph(ASD)} * \cos\theta * h * b_2}{2 * I_{YY}} - \frac{F_{ph(ASD)} * \sin\theta * h * b_1}{2 * I_{XX}} = \textbf{-6549}$$

Maximum Compression at Seismic Mount Location #4:

(LRFD) $$P_c = \frac{1.2W_p + F_{pv}}{N} + \frac{F_{ph} * \cos\theta * h * b_2}{2 * I_{YY}} + \frac{F_{ph} * \sin\theta * h * b_1}{2 * I_{XX}} = \textbf{20979}$$

(ASD) $$P_{c(ASD)} = \frac{W_p + F_{pv(ASD)}}{N} + \frac{F_{ph(ASD)} * \cos\theta * h * b_2}{2 * I_{YY}} + \frac{F_{ph(ASD)} * \sin\theta * h * b_1}{2 * I_{XX}} = \textbf{15589}$$

Maximum Shear Per Seismic Mount Location:

(LRFD) $$P_s = \frac{F_{ph}}{N} = \textbf{5763}$$

(ASD) $$P_{s(ASD)} = \frac{F_{ph(ASD)}}{N} = \textbf{4034}$$

REGISTERED PROFESSIONAL ENGINEER — MARY EVAN LANDINGHAM — MAY 10, 20[illegible]
EXPIRES 12.31.24

Steel Bolt Anchorage Design per AISC, 14th Editon, Sections J3.6 & J3.7 (ASD):

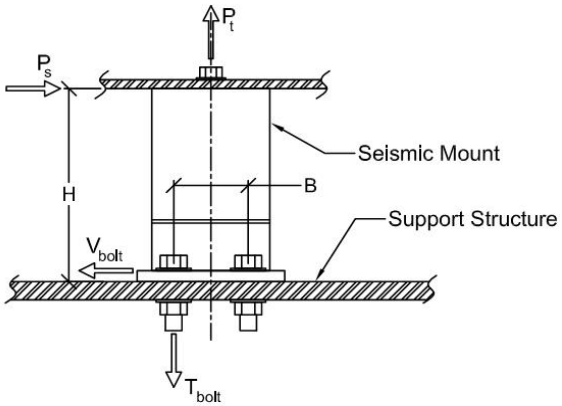
Height of Mount, H =	**8.75**
Min. Bolt Spacing, B =	**6.25**
Anchor Bolt Diameter, d =	**3/4**
Grade/Quality of Steel Bolt =	**A307**

Ab = 0.442 (Bolt Unthreaded Area)

Max. Tension per Bolt, $T_{bolt} = \frac{P_t}{4} + \frac{P_s * H}{2B} =$ 4461

Max. Shear per Bolt, $V_{bolt} = P_s/4 =$ 1009

At =	0.334
Ak =	0.323
Fnt =	45000
Fnv =	24000
$f_t = T_{bolt}/A_t =$	13357
$f_v = V_{bolt}/A_k =$	3122
$F'_{nt} = (1.3 * F_{nt} - \frac{2 * F_{nt}}{F_{nv}} * f_v) \le F_{nt} =$	45000
$T_{allow} = (F'_{nt} * A_b)/2 =$	9940
$V_{allow} = (F_{nv} * A_b)/2 =$	5301
$(T_{bolt}/T_{allow}) =$	**0.45** **OK**
$(V_{bolt}/V_{allow}) =$	**0.19** **OK**



DWN: NN

DWG. NO.: C01B-1

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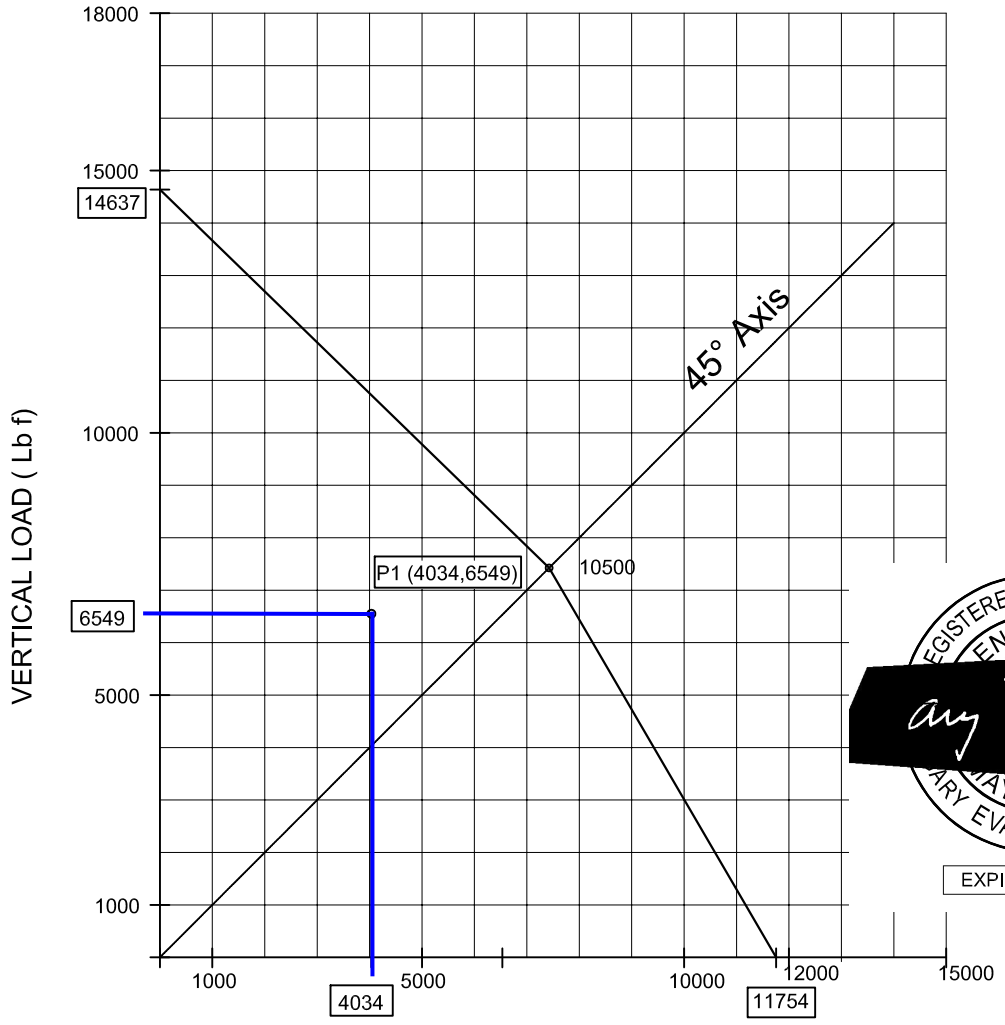
CERTIFIED FOR:
JOB NAME : ARLENE SCHNITZER
CUSTOMER : MASON OREGON
CUSTOMER P.O.
MASON E.O. : 36969 DWG.: WF-36969-C01C

Comparison of calculated loads vs rated loads on SLRSO-4 isolator

(REF. A-30070-1 & 30072-1)

Equipment Tag	Total Weight	Number of Isolators	Actual Vertical Load Per Isolator (Pt)	Actual Horizontal Load Per Isolator (Ps)	Plotted Load Point
CT-1	33900 LBS	(6)	6549 LBS (REF. C01B-1)	4034 LBS (REF. C01B-1)	P1



REGISTERED PROFESSIONAL ENGINEER
MAY 10, 20
MARY EVAN LANDINGHAM
EXPIRES 12.31.24

DWN	CHKD	DATE
NN		11/20/23

DWG. NO. WF-36969-C01C